



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

JANUARY – APRIL 2022

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER SCIENCE

REGULAR PROGRAMME

CMT 101: COMPUTER HARDWARE AND SOFTWARE MAINTENANCE

LIS 200: HARDWARE AND SOFTWARE MAINTENANCE

Date: APRIL 2022

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any TWO Questions

1. a) Operating systems contain a number of components that are aimed at providing different functionalities to the user. Briefly describe the functions of the following using an operating system of your choice.
- i) Kernel (2 marks)
 - ii) User Interface (2 marks)
 - iii) Libraries (2 marks)
 - iv) Help (2 marks)
- b) Using an example, explain the concept of form factor as used in computer assembly. (2 marks)
- c) State the use of the following Ms Dos commands, providing an example on how each of the commands is issued on the command prompt.
- i) ATTRIB (2 marks)
 - ii) REGEDIT (2 marks)
 - iii) Copy CON (2 marks)
- d) Describe the procedure for making a DVD/CD Drive the First Boot Drive.

(4 marks)

e) State the importance of the following

i) Regularly updating your antivirus software. How can this be achieved.

(2 marks)

ii) Regularly Blowing dust from your computer system. How can this be done?

(2 marks)

f) Provide the assembly procedure of the following components.

i) Motherboard

(3 marks)

ii) DVD Drive

(3 marks)

2. a) A number of diagnostic tools are available that will assist you during the troubleshooting process. Some of the tools assist in diagnosis of hardware problems while other tools are used in the diagnosis of software problems. Identify and explain FIVE main tools that can be used in diagnosis.

(10 marks)

b) A number of interfaces exist that allow different components to be connected to your computer. In some cases some components have more than one interface they can be connected to: identify and describe the features of five main interfaces that you are likely to find in a modern PC.

(10 marks)

3. a) Provide a description of the following with respect to hardware and software maintenance.

i) Device Drivers

(2 marks)

ii) Expansion slots

(2 marks)

iii) Cmos Settings

(2 marks)

iv) Over Clocking

(2 marks)

i) Type B USB connection

(2 marks)

b) List any THREE main features supported by USB

(3 marks)

c) Describe briefly the IEEE 1394 (Firewire) Port.

(2 marks)

- d) There are a number of points to bear in mind when adding or removing peripheral. State any five of these features.

(5 marks)

4. Describe the following concepts:

- i. Cold boot **(2 marks)**
 - ii. Registry **(2 marks)**
 - iii. Motherboard **(2 marks)**
 - iv. Chipset **(2 marks)**
 - v. Interface **(2 marks)**
- b. Briefly describe the power on self test (POST) Process.

(5 marks)

- c. Identify FIVE factors to be considered when choosing an operating system for your computer.

(5 marks)

5. a. List and explain THREE cooling ways that can be used in a computer system.

(6 marks)

- b. Using a valid example explain the use of a batch file.

(4 marks)

- c. In each of the following situations, identify a probable problem and a solution.

(3 marks)

- i) Nothing shows on the screen even when the machine is on.
 - ii) Computer will not switch on.
 - iii) Non system disk message displays on the screen.
 - iv) Missing operating system error displays on screen.
 - v) Your printer cannot print.
- d. Explain the main reasons for assembling your own PC.

(5 marks)

- e. Discuss any TWO general strategies for supporting and resolving a computer user's problems.

(2 marks)

END